



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,842	10/30/2003	Brian D. Noble	UOM 0280 PUSP	9288
22045	7590	02/11/2008		
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			EXAMINER NGUYEN, QUANG N	
			ART UNIT	PAPER NUMBER
			2141	
			MAIL DATE	DELIVERY MODE
			02/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/697,842

Applicant(s)

NOBLE ET AL.

Examiner

Quang N. Nguyen

Art Unit

2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20040322.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Detailed Action

1. This Office Action is responsive to the Application filed on 10/30/2003. Claims 1-32 are presented for examination.

Priority

2. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 03/22/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 17-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

7. As to claims 17-32, it appears that claims 17-32 would reasonably be interpreted by one of ordinary skill as a system of "software per se", failing to fall within a statutory category of invention. Applicant's disclosure contains no explicit and deliberate definition for the term "means", and in the context of the disclosure and claims in question, one of ordinary skill would reasonably interpret the "means" as software applications. As such, the system of "means" alone is not a machine, and it is clearly not a process, manufacture nor composition of matter. Thus, the claims are not limited to statutory subject matter and are therefore nonstatutory.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 2141

9. Claims 1-2 and 17-18 are rejected under 35 U.S.C. 102(a) as being anticipated by Batten et al. ("pStore: A Secure Peer-to-Peer Backup System"), hereinafter "**Batten**".

10. As to claims 1-2, **Batten** discloses a peer-to-peer method for performing and managing backups in a network of nodes which form a cooperative collection of machines having excess storage capacity, the method comprising:

(a) determining a plurality of peer nodes from the network of nodes for a first node of the network based on an amount of stored data common to both the first node and each of the plurality of peer nodes (*the user specifies its name and version [of the stored data], or browses the pStore directory hierarchy to retrieve the metadata indicating where, i.e., what node, to look for blocks belonging to the desired version*) (**Batten, pages 2-3, section 3 "System Architecture"**); and

(b) storing a backup copy of data unique to the first node on each of the plurality of peer nodes so that each of the plurality of peer nodes stores a substantially complete backup of the first node (*to insert/backup a file, pStore computes an identifier specific/unique to the user's file, the file is encrypted, broken into digitally signed blocks and assembled with signed metadata, then the metadata and blocks are inserted into a peer-to-peer network*) (**Batten, pages 2-3, section 3 "System Architecture"**).

11. Claims 17-18 recite corresponding system claims of method claims 1-2; therefore, they are rejected under the same rationale.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 3-4 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batten, in view of Rowstron et al. ("Pastry: Scalable, decentralized object location and routing for large-scale peer-to-peer systems"), hereinafter "Rowstron".**

14. As to claims 3-4, **Batten** discloses the method of claim 1, but does not **explicitly** disclose wherein the step of determining is also based on network distance that each of the plurality of peer nodes is from the first node and wherein at least one of the plurality of peer nodes is the local peer node to reduce network load and improve restore performance.

In the same field of endeavor, **Rowstron** discloses each node in the Pastry network has a unique identifier (nodeId), when presented with a message and a key, a Pastry node efficiently routes the message to the node with a nodeId that is numerically closest to the key, among all currently live Pastry nodes, wherein Pastry takes into

Art Unit: 2141

account network locality: it seeks to minimize the distance messages travel, according to a scalar proximity metric like the number of IP hops (**Rowstron, page 1, Abstract**).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the features of Pastry taking into account network locality by seeking to minimize the distance messages travel, as disclosed by **Rowstron**, into the teachings of **Batten**. One would be motivated to do so to maintain replicas of a file on the k nodes closest to the key, despite node failure and node arrivals, and using only local coordination among nodes with adjacent nodes (**Rowstron, page 2, 5th paragraph**).

15. Claims 19-20 recite corresponding system claims of method claims 3-4; therefore, they are rejected under the same rationale.

16. Claims 5-16 and 21-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Batten**, in view of **Elnikety et al.** ("Peer-to-peer Cooperative Backup System"), hereinafter "**Elnikety**".

17. As to claim 5, **Batten** discloses the method of claim 1, but does not **explicitly** disclose wherein at least one of the plurality of peer nodes is a remote peer node to provide geographic diversity.

In the same field of endeavor, **Elnikety** discloses a peer-to-peer cooperative backup system, wherein each computer has a set of partners from different geographic locations (**Elnikety, page 1, 3rd paragraph**).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the feature of each computer/node has a set of partners from different geographic locations, as disclosed by **Elnikety**, into the teachings of **Batten**. One would be motivated to do so to allow each computer's data is stored distributively in order to achieve better diversity, fault-tolerance and high reliability (**Elnikety, page 1, Abstract**).

18. As to claim 6, **Batten-Elnikety** discloses the method of claim 1, wherein data is stored in the first and peer nodes as chunks of data (**Batten, page 3, section 3.1.1 and Elnikety, page 2, section 2.2**).

19. As to claims 7-8, **Batten-Elnikety** discloses the method of claim 1, further comprising monitoring the plurality of peer nodes to determine if a peer node is no longer capable of providing a backup to the first node, to determine a replacement peer node from the network nodes and to store a backup copy of data unique to the first node on the replacement peer node (**Elnikety, page 1, last paragraph**).

20. As to claim 9, **Batten-Elnikety** discloses the method of claim 1, further comprising preventing a forged request to drop a backup copy from one of the peer nodes (**Elnikety, page 3, section 3.1.2**).

21. As to claims 10-13, **Batten-Elnikety** discloses the method of claim 6, wherein the data is stored in the peer nodes as encrypted chunks, wherein the data is encrypted by a key derived from the data stored in the peer nodes, and wherein the key is encrypted by a key-encrypted key stored with the data (**Batten, pages 3-4, section 3.1.1**).

22. As to claim 14, **Batten-Elnikety** discloses the method of claim 2, wherein data is stored in the peer nodes as chunks of encrypted data and wherein each of the encrypted chunks includes data which represents a set of nodes having an interest in the encrypted chunk (*the public key contained within the public metadata provides ownership information*) (**Batten, page 5, section 3.1.2 Data Chunks**).

23. As to claim 15, **Batten-Elnikety** discloses the method of claim 1, further comprising determining when the first node is decommissioned and reclaiming storage space on the peer nodes associated with the decommissioned node (*if a computer finds out that one of its partners is bad, i.e., always down or disconnected most of the time, it will cancel the backup agreement with this partner and will find a new partner instead*) (**Elnikety, page 1, last paragraph**).

Art Unit: 2141

24. As to claim 16, **Batten-Elnikety** discloses the method of claim 1, further comprising determining whether a node of the network claiming to be a peer node is a peer node (*issuing periodic challenges to its partner to ensure that they are holding its backup data*) (**Elnikety, page 3, section 3.1.1**).

22. Claims 21-32 recite corresponding system claims of method claims 5-16; therefore, they are rejected under the same rationale.

23. Further references of interest are cited on Form PTO-892, which is an attachment to this Office Action.

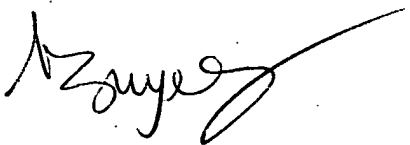
Art Unit: 2141

24. A shortened statutory period for reply to this action is set to expire THREE (3) months from the mailing date of this communication. See 37 CFR 1.134.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Quang N. Nguyen
Primary Examiner – AU 2141
February 08th, 2008